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10/514,424

05/26/2005

Rudolf Peter Muis

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EXAMINER

ROLLAND, ALEX A

ART UNIT

PAPER NUMBER

1792

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/514,424 | Applicant(s) MUIS ET AL. | |
| | Examiner ALEX ROLLAND | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-20 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 2, 7-20 are rejected under 35 U.S.C. 102(e) as being anticipated by WO 03/082480 to Matsunaga et al.

Matsunaga teaches a liquid dispensing apparatus which handles a minimum amount of liquid without wasting it by dispensing an exact amount of liquid while letting the liquid flow between two syringes (abstract). With reference to figure 1, the apparatus comprises a tubular dispensing means disposed substantially parallel to a horizontal substrate W (the tube connecting the two syringes). In the wall of the tube are openings including element 3 and the element labeled as DRAIN (claimed “lateral outlet openings”). The apparatus further comprises the syringes (claimed “liquid container”) and L shaped conduits for carrying the liquid from the syringes to the outlets. This apparatus has specific applications for applying an adhesive or coating material including solid particles (pg. 1, lines 5-8) but could be used to deposit any material onto any substrate or coated substrate, including a nanocrystalline coated substrate.

Regarding claim 7, the tube is connected to a first syringe 5-2 (claimed "first outer end") and is closed at several points away from this point of attachment such as elements 10-2 and 10-1 (claimed "secont outer end at a distal end") (Fig. 1).

Regarding claim 8, 13-14, 19-20, the tube is connected to syringe 5-2 on one side and is connected to syringe 5-1 on the other side (Fig. 1). The apparatus functions by having constant flow from a first syringe to a second syringe during deposition such that an appropriate amount of liquid is deposited onto a substrate and the excess liquid is directed into the second syringe (pg. 12, line 10-pg. 13, line 1). Thereafter, the flow between the syringes is reversed so that the liquid collected in the second syringe is deposited onto the substrate and the excess is collected in the first syringe (pg. 13, lines 1-24).

Regarding claim 9, 15, the element labeled DRAIN is an outlet and provided in a top side of the tube (Fig. 1).

Regarding claim 10, 16, orifices 8-1 and 8-2 comprise a portion of the tube and have a circular outer periphery in vertical cross-section as shown by its measurement of diameter (pg. 10, line 24-pg. 11, line 26).

Regarding claim 11, 17, a second embodiment utilizes a pump 24 to regulate the flow through at least pipe 28 (a conduit means) (pg. 20, lines 13-26 and Fig. 2).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/082480 to Matsunaga et al in view of EP 0930641 A2 to Kiguchi et al.

Matsunaga is discussed above but is silent as to the specifics of the substrate including movement and heating of the substrate. However, Kiguchi teaches a similar dispensing apparatus comprising a tubular dispensing means in the form of an ink-jet print head equipped with a nozzle plate having a plurality of tubular nozzles (col. 7, lines 42-53), an ink tank functioning as a liquid container (col. 7, line 33), and a pipe connecting said ink tank to said ink-jet print head functioning as a conduit means (See Fig. 1, item 27 and col. 7, line 34). The apparatus includes a drive mechanism which allows the ink-jet print head to be moved in the direction of the X- axis and Y-axis (col. 8, lines 38-50); additionally, it is possible to use an arrangement in which the substrate is moved in relation to the ink-jet print head (col. 8, line 51-col. 9, line 2); it is well established in the art that movement of the substrate in this fashion constitutes an XY table. Further, a treatment apparatus is provided which may include a compressor and heater for blowing hot air, a laser emitting diode for generating laser light, or a lamp for lamp irradiation all of which are used to heat the substrate during the coating process (col. 10, lines 19-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the substrate control elements of Kiguchi to Matsunaga because Kiguchi and Matsunaga are similar apparatuses and Kiguchi states

that substrate control elements are useful to include in a substrate liquid deposition apparatus.

Response to Arguments

3. Applicant's arguments, filed 6/9/09, with respect to the rejection(s) of claim(s) 2-20 under 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of claim amendments and further search.

Conclusion

5. No Claims are allowed. All pending claims are rejected for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX ROLLAND whose telephone number is (571)270-5355. The examiner can normally be reached on Monday through Friday, 9:00 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571)272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALEX ROLLAND/
Examiner, Art Unit 1792

/Michael Cleveland/

Supervisory Patent Examiner, Art Unit 1792